COAST GUARD BULLETIN

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DISTRICT AIDS TO NAVIGATION OFFICERS HOLD CONFERENCE IN WASHINGTON

A conference of headquarters and district aids to navigation officers was held in Washington, 13–17 November, to discuss the problems of the restoration of the aids to navigation work to a peacetime basis. Presiding officers at the meetings were Rear Admiral C. A. Park and Commodore F. P. Dillon.

At the opening session, following a brief statement by Rear Admiral Park on the purpose of the conference, Rear Admiral L. T. Chalker, assistant commandant, spoke on the policy and program of the Coast Guard with respect to marine aids to navigation. This was followed by reports on recent developments relating to marine aids to navigation, and relations with the Navy in the establishing of aids for military purposes both inside and outside the United States. In keeping with the plan of the conference, an opportunity was afforded all those present to discuss each one of the subjects presented.

In the discussion of peacetime operating problems, matters brought up included: Restricted areas, seadrome lighting, reduction of number of aids to peacetime status, cooperation between the Coast Guard and the Civil Aeronautics Authority in connection with marks and guides for surface and air craft, the marking of obstructions for the Army Engineers, wreck marking, and extent of furnishing aids for pleasure craft.

A session was given over to matters of uniformity and standardization of the aids to navigation, including characteristics, daymarks, lights, sound signals, and radiobeacons. Operational inspection methods in the districts were also discussed and the practices of the various aids to navigation officers described.

Electronic aids to navigation, other than radiobeacons, came in for discussion and explanation. This included radar, loran, anrac, racon, and other recent developments and their probable future peacetime use. Personnel phases of aids to navigation work were dealt with by Commander E. T. Calahan of the training division and Commander C. E. Herrick of the civilian personnel division. There was also a consideration of the problem of training enlisted men in aids to navigation duties, and also of the training of aids to navigation officers, including their rotation in these duties.

The final session of the conference was taken up largely with the aids to navigation work carried on by headquarters, and the relation of this work to other headquarters divisions and with other branches of the Federal Government. This subject branched out into a consideration of relations with the general public and the shipping interests.

CONTROL OF PILOTAGE THROUGH RESERVE MEMBERSHIP IS DROPPED

The control of pilotage in the approaches to various United States ports, originally assumed by the Coast Guard as a port security measure, was relinquished effective 30 November 1945. This relinquishment took the form of a disenrollment of all pilots and pilot's association employees from the ranks of the Coast Guard Temporary Reserve. Control of pilotage and the affairs of the pilot's association has now been returned to the various pilotage groups operating under State legislation. In appreciation of the effective work of the

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pilots, performed while enrolled as members of the Coast Guard, these temporary reservists were advanced one step in rank or rating prior to disenrollment.

Control of pilotage was delegated to the Coast Guard by the Secretary of the Navy in 1942 as a national defense measure. Pilots and other employees of the pilot's associations were enrolled as temporary members of the Coast Guard Reserve and placed under the general control of the district Coast Guard officers. In most instances this control was delegated to the captains of the port. In assuming control the Coast Guard interfered with the functions of the State pilot commissioners to the least extent compatible with military control of the pilots. A Notice to Mariners published at that time clearly set forth the manner in which pilotage would be conducted for the duration of the war. The text of this notice was as follows:

* * * State pilots for this port are now members of the Coast Guard Reserve without pay from the United States. This step is in the interest of port security, the safeguarding of vital war information, and the coordination of the existing State pilot system in accordance with wartime requirements.

Pilotage will continue as before. While actually piloting the vessel, the pilot is still acting as a State pilot, rather than as a Coast Guard officer. The State pilot's relationship to the master or commanding officer, the vessel and the owner remains as established in maritime law. There is no substitution of command by reason of the membership of the pilot in the Coast Guard Reserve. Masters and commanding officers are still responsible for the navigation of their vessels and may relieve or supersede the pilot whenever in their judgment it is necessary, as heretofore. The United States is still not responsible for any negligence of the pilot.

The pilot is still entitled to his fees as prescribed by the State and these fees will be collected in the usual manner.

EXECUTIVE ORDER ABOLISHES ATLANTIC AND GULF DEFENSIVE SEA AREAS

Defensive sea areas on the Atlantic and Gulf coasts of the United States have been formally abolished as a result of the issuance of Executive Order 9650, dated 31 October 1945, and along with them various restrictions upon the movement of vessels.

One effect of the elimination of the defensive sea areas has been the removal of examination vessels stationed at the entrances to all the important ports and manned by Coast Guard personnel. These vessels were the focal points from which examination of all commercial and pleasure craft was conducted. Among the restrictions enforced by the Coast Guard, and one which is now abolished, was that prohibiting the use or possession of photographic apparatus within the defensive areas. Movement licenses, another form of vessel control, have already been abolished.

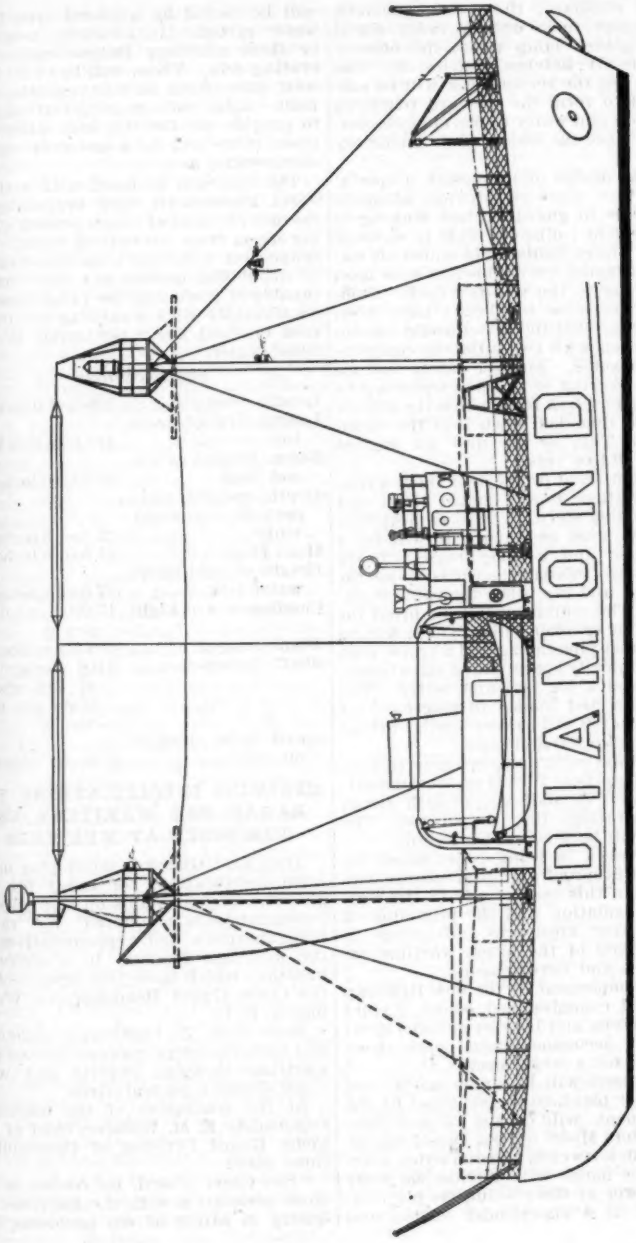
Insofar as the Atlantic and Gulf coasts are concerned, the abolishment of the defensive sea areas completes the removal of practically all restrictions upon commercial and pleasure vessels. The only remaining restricted areas on the Atlantic and Gulf coasts are certain comparatively small areas in the vicinity of military installations, where target practice, experimental work, or similar activities are still in progress.

NEW LIGHTSHIP UNDER CONSTRUCTION FOR DIAMOND SHOALS

A contract has been let for the construction of one new lightship, and bids have been opened for the construction of a second ship from the same plans. The vessel for which the contract has already been awarded will be known as Coast Guard LG 189, and the builder is the Wheeler Shipyard, Inc., Brooklyn, N. Y.

This vessel, which is now under construction, will eventually be placed on the Diamond Shoal Lightship Station, off the coast of North Carolina. The regular station ship which marked this spot previous to the war was Lightship No. 105, which was sunk in Chesapeake Bay as the result of a collision in July 1944. Pending the completion of the new vessel, No. 189, it is planned to mark the station with No. 114, a modern Diesel-electric vessel.

Lightship 189 is to be constructed of steel, and will consist of an all-welded steel frame and shell, a continuous steel main deck, second deck, and watertight lower deck forward and aft of the machinery spaces. The second deck will be arranged with bos'n's stores forward; the windlass space with an electrically



New Lightship, No. 189, for Diamond Shoals Station.

driven windlass; the crew's quarters, the engine room casing, radio signal room, galley, lamp room, the officers' quarters aft; hatches, scuttles, etc. The hold below the second deck will be subdivided to form the forward trimming tanks, oil and water tanks, chain locker, general storage holds, and machinery spaces.

In the design of the vessel, a special effort was made to provide adequate bulkheads to guard against sinking in the event of collision. This is the first United States lightship in which all watertight transverse bulkheads have been carried up to the weather deck. Sufficient transverse bulkheads have been provided so that the vessel would remain afloat even with two adjacent compartments flooded. Another safety feature is the carrying of the hawsepipe up to the weather deck from which the anchor chain is then led down into the chain locker. This is the first all welded United States vessel.

The outboard profile will show a continuous sheer line, a raked stem, and overhanging stern. The main deck will be continuous and above it will be a deckhouse and a wheelhouse. There will be two tubular steel masts, one for the light and the other for radio apparatus. The mainmast will be fitted for the use of spanker sails. There will be an exhaust pipe casing and a trunk with a mechanically operated fog signal apparatus, and a fog bell and belfry. The hull form and loaded displacement of Lightship 189 will be very similar to that of Lightship 100 and class.

Fire tube boilers of steel construction will supply heat for all of the compartments and in addition, furnish steam for operating the evaporator. The boiler will be fired on Diesel oil.

The vessel is being constructed entirely of fireproof and fire-resistant material. In this respect and in the matter of insulation and the providing of fire fighting apparatus, advantage is being taken of the latest wartime experiences and developments.

The complement of the new lightship will be, 1 commissioned officer, 2 chief petty officers, and 14 other enlisted men; however accommodations have been provided for a larger crew.

The vessel will be single screw, and the power plant, to be furnished by the Government, will consist of one General Motors Model 6–278A Diesel engine, with clutch reverse, and reduction gearing. The motor will provide 500 shaft horsepower at 650 revolutions per minute. It is a six-cylinder engine and will be cooled by a closed type fresh water system. In addition there will be three auxiliary Diesel-electric generating sets. These will be of 60 kilowatt alternating current capacity. The main engine will be air starting, and to provide air for this and other purposes there will be a motor-driven air compressing unit.

The ship will be fitted with a single effect atmospheric shell evaporator to operate on 5-pound steam pressure, taking steam from the heating boiler. The evaporator will have a service capacity of about 750 gallons per day and be capable of producing the rated capacity continuously with a salinity not to exceed one-half grain per gallon of distilled water.

SPECIFICATIONS

Length over-all	128 feet 0 inches.
Length on load water line	112 feet 0 inches.
Beam, molded at second deck	30 feet 0 inches.
Depth, molded main deck at side amidships	21 feet 6 inches.
Mean Draft	11 feet 0 inches.
Height of light above water line	57 feet 0 inches.
Candlepower of Light	15,000 candlepower.
Displacement	630 tons (about).
Shaft horsepower	500 horsepower at 240 revolutions per minute.
Speed to be attained on trial	9 knots (about).

MINIMUM SPECIFICATIONS FOR RADAR FOR MARITIME USE DISCUSSED AT MEETINGS

The Coast Guard is developing minimum specifications for radar for use aboard merchant ships on the basis of recommendations offered by radar manufacturers and representatives of the maritime industry in a series of meetings which have just been held at the Coast Guard Headquarters, Washington, D. C.

More than 75 electronics engineers and manufacturers' representatives and maritime shipping experts met with Coast Guard representatives.

At the conclusion of the meetings, Commodore E. M. Webster, chief of the Coast Guard Division of Communications, said:

"The Coast Guard, by reason of its close association with the maritime industry in safety at sea problems, has

assumed the responsibility, with the close cooperation of the Navy, of determining the minimum specifications for radar equipment to be used on board merchant vessels, in order that ship operators might benefit by radar information as soon as possible. Every effort is being made to provide simplicity of operation with optimum performance, however, the problem is broad in its scope because of the varying operational requirements of the ship operators and the expense involved.

"Consideration was given to the large quantity of surplus equipment now available, to the experience and knowledge gained during the war, to the use of a Merchant Marine radar with other navigational aids, and to the probable effect that such installations will have on the revision of present navigational laws and a reduction of insurance rates. As a result, three sets of minimum specifications were prepared and submitted by the Coast Guard as a basis of formulating discussion. The recommendations presented considered the equipment in three classes, A, B, and C. The class A radar will have the best performance, will provide both early warning of approaching vessels and a high resolution for the best practicable navigational assistance in restricted waters, while the class B radar will have less resolution and the class C radar, because of poor resolution, will be of value only as an anti-collision device.

Those attending the meeting with the Coast Guard officials were: J. D. Monton, Atlantic Refining Co., Philadelphia, Pa.; R. J. Baker, American Merchant Marine Institute; R. C. Newhouse, Bell Telephone Laboratories; Fred J. Kitty and Robert J. Davis of Bendix Radio, Towson, Md.; Willard C. Blaisdell, Bludworth Marine, N. Y.; H. V. Noble, Crosley Corp., Cincinnati, Ohio; Maxwell S. Symon and Leonard E. Sherbin, De Mornay-Budd, Inc., New York, N. Y.; C. M. Schedlbauer, L. F. Christianson, and A. L. Adamson of Electronics Associates, N. J.; F. B. Ostman, Farnsworth Television & Radio Corp.; W. E. Dulin and H. C. Looney, Federal Communications Commission; A. G. Kandoian, Federal Telecommunication Laboratories, New York; William D. Short, R. C. Ferrar, E. J. Girard, and S. W. Fenton, Federal Telephone & Radio Corp.; E. Lawrence, Jr., E. C. Kluender, W. F. Hafstrom, H. DuVal, Jr., L. H. Lynn, and K. M. Uglow of the General Electric Co., Schenectady, N. Y.; R. L. Garman, General Precision Laboratory, Inc.; G. P. Goldbach, International Proj. Corp.; R. P. Huestis, Keystone Shipping Co., Philadelphia, Pa.; C. M. Jansky, Jr., Lake Carriers Association, Cleveland, Ohio; C. G. Thommen and E. H. Price of the Mackay Radio & Telegraph Co., Marine Division; A. Orden, National Bureau of Standards; H. L. Cornell and H. W. Schlichting of the National Federation of American Shipping; M. Ingram, Pilot Marine Corp., New York, N. Y.; I. F. Byrnes, F. E. Spaulding, and C. E. Moore of the Radio Marine Corp., New York, N. Y.; Wm. A. Eaton, Willis F. Johnson, Kenneth V. Curtis, James J. Lynan, and Gordon B. Koch of the Raytheon Manufacturing Co. (Bureau of Ships); W. A. Klammer, Remler Co., Ltd.; R. E. Erbentraut, E. J. Isbister, C. W. Souder, and G. A. Ermans of the Sperry Gyroscope Co., Inc., Brooklyn, N. Y.; I. C. Clement, A. G. Ennis, H. M. Hart, and J. L. Lovett of the Submarine Signal Co., Boston, Mass.; Alice Raine, Telecommunications Reports; G. H. McClurg, Signal Corps, United States Army; Lt. J. T. Wilson, Office of Chief of Naval Operations, United States Navy; Commander A. B. Jones and Lt. Comdr. I. L. McNally, Bureau of Ships, United States Navy; W. E. Hammond, A. C. Rohn, and A. P. Miller of the U. S. Maritime Commission; James T. Lewis, War Shipping Administration; F. C. McMullen, Western Electric Co., Inc.; G. H. Philps, C. W. Miller, J. B. Armstrong, and H. C. Brunner of the Westinghouse Electric Corp.; E. G. Henry, Marine Division, Mackay Radio & Telegraph Co.

Coast Guard officers attending were: Commodore E. M. Webster, Commander O. A. Peterson, Commander C. L. Ottinger, Commander B. H. Brallier, Commander O. C. Rohnke, and Lt. J. G. Bastow of Communications Operations; Commander E. E. Brunner and Lt. F. A. B. Smith of Communications Engineering Division; Commander Q. Walsh, Public Information Division; and Commander J. B. Feder, Merchant Marine Technical Division.

The views and comments given at the meetings are now available in a final set of recommended specifications which are as follows:

MINIMUM SPECIFICATION BRIEF NO. 1

Designation.—Surface Search and Navigational Radar.

General description.—This is to be a three-centimeter surface search radar primarily designed for ocean-going vessels to provide early warning of approaching vessels and navigational dangers on the open sea as well as high resolution for navigation in restricted waters.

Operational requirements.—Designed for operation by bridge personnel with little or no technical training. The operation of this equipment must not cause interference with other aids to navigation.

Performance—Range.—Maximum 30 miles; Minimum 100 yards.

Resolution.—A properly designed radar with pulse length and antenna beam width as elsewhere prescribed in this specification brief should give a range resolution of 100 yards and a bearing resolution of 3° on the shortest sweep scale.

Indication and data output—Indicator.—At least 7" PPI scope (Plan Position Indicator) Sweep linearity shall not deviate more than ±2% except that the first and last 10% of the sweep may deviate by ±5%.

Range scales.—Variable 2–5 miles; 4–15 miles; 15–30 miles; positive range scale indicator is to be provided:

Range indicator.—Variable range marker with range of 500 yards to 30 miles, accuracy ±2% or ±50 yards whichever is greater.

Bearing indication.—Stabilized PPI presentation (True bearing display); bearing cursor; Ships head indicator; variable azimuth illumination. Over-all absolute bearing accuracy from antenna to display ±2°.

Positive means should be provided to indicate whether or not the over-all operation of the radar is such that it may be relied on to provide effective anti-collision and navigational information.

Antenna—Reflector—Truncated parabola or equivalent.

Beam Width.—Horizontal—2° maximum at half power points; Vertical—15° minimum at half power points (7.5° above and below horizon).

Mounting—Navy Standard Flange (16½" bolting circle with eight 13/16-inch holes equally spaced, two opposite holes on center line.

Polarization-Horizontal.—

Rotation—Continuous, 360° in azimuth, speed of rotation 6 to 15 r.p.m. Control on main on-off switch. Antenna reversing switch may be provided to sector scan.

Antenna control.—Side Lobes—25 db down.

Transmitter. — Frequency recommended—3 cm band 9320 to 9430.

R. F. Source.—Magnetron.

Modulator.—Hydrogen thyratron or equivalent.

Main transmission line.—The over-all attentuation from the R. F. source to the radiator must not be more than 3 db one way.

Peak power.—15 kw.

Pulse repetition rate.—Minimum 800 cps.

Cruise length.—0.5 maximum.

Trigger.—Plus 10 to 50 volts (across high impedance).

Receiver.—IF, RF, and video band pass-optimum for pulse length chosen.

Overall gain—120 db.

Video output—2.5 volts±0.5 volts (across 75 ohms).

Overall Noise above KT Δf—15 db maximum.

Features—Automatic Frequency control. Fast time constant and sensitivity time control or equivalent.

Power requirements.—The equipment should be designed to take power from a source of 115 volts, 60 cps single phase with a regulation of ±10 volts ±2 cps. In the case of D. C. equipped ships and ships with poor regulation, auxiliary power equipment will be necessary.

Operator controls.—On-off switch (all power). Bearing cursor knob. Range marker knob. Continuous gain control. Limited intensity control; focus to be essentially independent of intensity. Range selector (Positive range scale indicator). STC and FTC selector switch for varying degrees of either or both (Sea return suppressor). Azimuth scale light control. Antenna-reversing switch (optional).

Construction features.—Replaceable unit with chassis type assembly. Fuze alarms. Mounting and weather proofing shall be suitable for intended installation.

Installation features.—The antenna assembly must be so mounted as to provide 360° clearance to the horizon. The indicator is to be mounted in the pilot house. To facilitate this arrangement on all types of vessels, it is suggested that the RF components, the antenna assembly and the indicator be manufactured in separate units.

Special provisions for future modifications.—There is at present installed and operating a 3 cm racon system consisting of approximately 50 radar beacons installed at selected locations approximately 80 miles apart along the coasts of the United States for use of both surface vessels and aircraft. These beacons may be used by merchant vessels equipped with a radar capable of emitting a 2 microseconds challenging pulse at a frequency between 9320 and 9430 mcs. and capable of receiving beacon signals on 9310 mcs. Proper use of this system will indicate both range and bearing of these navigational aids. It is expected that in the near future there

will be provided a considerably simplified beacon system whereby radar equipped vessels may obtain bearings of micro wave beacons providing a ready means is available to shift the radar receiver to the beacon frequency. In view of the above, it is recommended that provision be made for future modification of the radar for use with micro wave beacons.

Remarks.—Standard Navy flange for antenna mounting, standard video output and standard trigger output are specified to facilitate ease of conversion for military use. The phrase "or equivalent" is applicable to all the above items. As radar is still in a progressive stage these specifications are intended merely as a mutual voluntary starting point. In using these specifications the constant improvement and development of radar should be contemplated and kept in mind.

MINIMUM SPECIFICATION BRIEF NO. 2

Designation.—Surface Search and Navigational Radar.

General description.—This is to be a 3 or 10 cm surface search radar primarily designed for ocean going vessels to provide early warning of approaching vessels and navigational dangers on the open sea as well as fair resolution for navigation in restricted waters.

Operational requirements.—Designed for operation by bridge personnel with little or no technical training in scope interpretation. The operation of this equipment must not cause interference with other aids to navigation.

Performance—Range.—Maximum, 30 miles; Minimum, 400 yards.

Resolution.—A properly designed radar with pulse length and antenna beam widths as elsewhere prescribed herein should give a range resolution of 200 yards and bearing resolution of 6° (six degrees) on the shortest sweep scale.

Indication and data output—Indicator.—At least 7" PPI (Plan Position Indicator) scope. Sweep linearity shall not deviate more than ±3% except that the first and last 10% of the sweep may deviate by ±7%.

Range scales.—Variable 2-5 miles; 4-15 miles; 15-30 miles; positive range scale indication is to be provided.

Range indication.—Fixed electronic range markers; accuracy of ±2% or ±100 yards, whichever is greater; not more than 5 range circles appearing on the scope.

Bearing Indication.—True or relative bearing indication with bearing cursor; overall absolute bearing accuracy from antenna to display ±3°. Positive means should be provided to indicate whether or not the overall operation of the radar is such that it may be relied on to provide effective anti-collision and navigational information.

Antenna — Reflector. — Truncated parabola or equivalent.

Beam width.—Horizontal—5° maximum to the ½ power points. Vertical—15° minimum (7.5° either side of horizontal) to the ½ power points.

Mounting.—Navy standard flange (16½" bolting circle with eight $^{13}/_{16}$-inch holes equally spaced, two opposite holes on center line).

Polarization.—Horizontal or vertical.

Rotation.—Continuous 360° in azimuth; speed of rotation 6 to 15 r. p. m. control on main on-off switch. Antenna reversing switch may be provided to sector scan.

Side Lobes.—20 db down.

Tranmitter. — Frequency Recommended—2900-3246 mcs or 9320-9600 mcs.

R. F. Source—Magnetron Modulator-Hydrogen thyratron or equivalent.

Main transmission line.—The overall attenuation from the R. F. source to the radiator must not be more than 1½ db one way on the 10 cm band nor more than 3 db one way on the 3 cm band.

Peak power.—15 kw on 3 cm band and 7 kw on 10 cm with the above transmission line attenuation limits.

Pulse repetition rate.—Minimum of 800 pps.

Pulse length.—1 microsecond maximum.

Trigger.—Positive 10 to 50 volts (across a high impedance).

Receiver.—IF, RF, and Video band pass—optimum for pulse length chosen.

Overall gain.—120 db.

Video output.—2.5 volts; ±0.5 volts (across 75 ohms).

Overall noise above KT mf.—15 db maximum.

Features.—Automatic frequency control or equivalent. Fast Time constant and sensitivity time control or equivalent.

Power supply.—The equipment should be designed to take power from a source of 115 volts, 60 cps single phase with a regulation of ±10 volts ±2 cps. In the case of D. C. equipped ships and ships with poor regulation, auxiliary power equipment will be necessary.

Operator controls.—On-off switch (all power). Bearing cursor knob. Range marker intensity knob. Continuous

gain control. Limited intensity control; focus to be essentially independent of intensity. Range selector (positive range scale indicator). STC and FTC selector switch for varying degrees. (See return suppressor.) Azimuth scale light control. Antenna—Reversing switch (optional).

Construction features.—Replaceable units with chassis type assembly.

Fuze alarms.—Mounting and weather proofing shall be suitable for intended installation.

Installation features.—The antenna assembly must be so mounted as to provide 360° clearance to the horizon. The indicator is to be mounted in the pilot house. To facilitate this arrangement on all types of vessels it is suggested that the RF components, the antenna assembly, and the indicator be manufactured in separate units.

Special provisions for future modifications.—At the present time these specifications are not sufficiently rigid to provide for operation with the presently installed beacons. However, it is expected that in the near future there will be provided a considerably simplified beacon system whereby radar equipped vessels may obtain bearings of micro wave beacons providing a ready means is available to shift the radar receiver to the beacon frequency. In view of this, it is recommended that provision be made for future modification of the radar for use with these micro wave beacons.

Remarks.—Standard Navy flange for antenna mounting, standard video output and standard trigger output are specified to facilitate ease of conversion for military use. The phrase "or equivalent" is applicable to all the above items. As radar is still in a progressive stage these specifications are intended merely as a mutual voluntary starting point. In using these specifications the constant improvement and development of radar should be contemplated and kept in mind.

MINIMUM SPECIFICATION BRIEF NO. 3

Designation.—Anti-collision radar.

General description.—This is to be a surface search radar primarily designed as an anticollision device with a limited value for navigational purposes.

Operational requirements.—Designed for operation by pilot house personnel with little or no technical training but with specialized operational training in the interpretation of equipment data.

Performance. — Range - Maximum. — Equipment must be capable of absolute indication of the presence of a C2 type cargo vessel or equivalent at a distance of 7 miles.

Minimum.—500 yards.

Accuracy.—±5% or ±500 yards whichever is greater.

Bearing.—Equipment must be capable of giving an over-all bearing accuracy of ±5° using as a target a C2 type cargo vessel or equivalent at a distance of 7 miles.

Indications and data output.—Indicator.—5" scope or larger.

Range.—A scope or equivalent.

Bearing.—Mechanical dial or equivalent. Positive means should be provided to indicate whether or not the over-all operation of the radar is such that it may be relied on to provide effective anti-collision and navigational information.

Antenna.—A motor driven train is to be provided with arrangements for shifting to manual train for bearing determination. Maximum speed of rotation 5 rpm. In case an A scope is used, it is to be understood that it must be continuously manned by trained personnel if the anticollision features are to be realized. Should a PPI scope be used, the provision for hand train may be eliminated and the speed of rotation may be increased to 15 rpm. The beam width in the vertical plane must be at least 20°.

Transmitter.—Frequency.—Any channel authorized by FCC for use of commercial radar. If operated within the frequency range of radar beacon stations. the pulse length must be such that it will not continuously trigger such stations. The operation of this radar must not cause interference with other aids to navigation.

GREENLAND PATROL SECTION OF COAST GUARD'S WAR HISTORIES IS ISSUED

"Greenland Patrol" is the title of a volume just issued by Coast Guard Headquarters as a part of its war histories series. This volume of 210 pages, with many illustrations, is an excellent description of the work of Coast Guard vessels and units in Greenland. In it are described the activities connected with the discovery and capture of Nazi radio and weather observation stations, the establishment of aids to navigation for transport and supply ships on the northern routes to Europe, and the survey of the vast expanses of Greenland in connection with the establishment of air bases. To a large extent the volume is the history of the work of the cutters *Northland*, *Nanok*, *Modoc*, *Comanche*, *General Greene*, and other Coast Guard

vessels. Of great interest is the work of the Coast Guard before the declaration of war between the United States and Germany and the experiences of the Coast Guard vessels during the battle between British naval vessels and the German battleship *Bismarck*.

The following excerpts are a further indication of the scope of the new publication: "The Greenland Patrol, at first, was formally organized in two parts. The South Greenland Patrol, consisting of the Coast Guard cutters *Modoc*, *Comanche*, *Raritan*, and *Bowdoin*, was established on 1 June 1941, under the command of Lt. Comdr. Harold G. Belford. The Northeast Greenland Patrol, consisting of the Coast Guard cutters *Northland*, *North Star*, and the U. S. S. *Bear*, was organized on 1 July 1941, under the command of Commander Edward H. Smith. Both patrols were consolidated in October of that year as the Greenland Patrol, Task Force 24.8, under Commander Smith, operating under the Commander-in-Chief, U. S. Atlantic Fleet, directly under the Chief of Naval Operations.

"When the patrol was first organized, Commander Smith was given the cold and more difficult half, the Northeast Patrol, the part where Germany would try to get a foothold. His ship, the famous *Northland*, was a 200-footer, all steel. Inside she was lined with cork to provide warmth. Second in command was Carl Christian von Paulsen, then also a commander. This former Coast Guard flier, who for many years was stationed in Miami, flying in hurricane weather, was equally prepared for the Arctic danger spot where enemy weather, as well as human foe, was a constant challenge. His ship was the *North Star*. With the third member of their patrol, the famous old *Bear*, the determined little fleet put out of Narsarssuak and set a course north and east. Their territory was the northeastern Greenland coast north of Scoresby Sound, the lively spot of the Arctic.

"According to the agreement with Greenland, we acquired the right to build air bases there in return for protecting Greenland from Nazi aggression. Our Army was given responsibility on land. Our Navy given responsibility in the surrounding waters, delegated much of this duty to the Coast Guard. The Greenland Patrol was established by the Coast Guard primarily to keep the bases supplied and to combat Nazi submarines and other forms of enemy activity. That meant keeping open the convoy routes for vessels and the air routes for planes—breaking ice, finding leads, fighting off submarines, rescuing survivors, maintaining aids to navigation, transporting men and supplies, reporting weather and ice conditions—and maintaining patrols to search out and destroy the enemy.

CORRECTION TO LIST OF VESSELS SUNK

The list of Coast Guard manned Navy vessels lost during the war, which was published in the November issue of the COAST GUARD BULLETIN, is incorrect with respect to the troop transports *Edward Rutledge*, *George F. Elliot*, *Little*, *Thomas Stone*, and *Joseph Hewes*. These vessels were Navy manned vessels, the Coast Guard personnel on board being restricted to the crews of landing craft carried by the vessel. This accounts for the loss of Coast Guard personnel when these transports were sunk.

FURTHER TESTS OF RADIO BEACON BUOYS TO BE MADE OFF CAPE COD

Further tests of a radiobeacon buoy are now being made through the establishment of a buoy of this type at Peaked Hill Bar, off Cape Cod, Mass. This buoy, classed as experimental, is a large whistle buoy, fitted with an automatic radiobeacon. It is stationed alongside Peaked Hill Bar Lighted Whistle Buoy 2 PH.

The radiobeacon will transmit on 286 kilocycles, transmitting two groups of ten 0.25-second dashes each with 1.25 second interval between groups, followed by a silent interval of 14.75 seconds.

Mariners passing within 10 miles of the buoy are requested to make observations and report results to the District Coast Guard officer, First Naval District. The report should contain information indicating the distance from the buoy at the time of observation, whether or not there was ready identification of the radiobeacon signal, and whether satisfactory pointing was obtained together with any appropriate comment.

EXPLOSIVES LOADING DETAIL SENT TO CALCUTTA

An explosives-loading detail of four officers has been assigned to Calcutta, India, at the request of the Army Transportation Corps. These officers, who have recently seen service in France and Italy, will supervise the handling and stowage of explosives aboard vessels at that port. It is expected that the work will continue for about 5 months.

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Jesse F. England first aviation member of Coast Guard Auxiliary.

COAST GUARD AUXILIARY ENROLLS ITS FIRST AVIATION MEMBER

The Coast Guard Auxiliary has enrolled its first aviation member in the person of Mr. Jesse F. England, who was sworn in on 3 November 1945, at a brief ceremony at Glenrock Airport just outside the city of Norfolk, Virginia. Mr. England is attached to flotilla 2, division V, Fifth Naval District, and he and subsequent aviation members will remain attached to that unit until such time as there are 10, when a separate squadron will be formed.

Mr. England was born 14 June 1911, in Bourbon, Mo. In 1927 he joined the Navy and was discharged in 1934 with a fire controlman's rating. He then joined the local branch of a national merchandising concern and served as service manager of their Norfolk store for 8 years. During this time he took up flying as a hobby, and achieved sufficient proficiency to be rated as a commercial pilot and flight instructor. In 1942 he joined the Army Reserve as a flight instructor. He served in that capacity for 2 years. Upon discharge, he and his partner, Mr. J. B. Fishborne, purchased the present site of the Glenrock Airport. At the present time there are 30 planes on the field, 8 of which belong to Mr. England and his partner, and, although all 8 of the planes are available to the Auxiliary, only 1 was brought in. Mr. England has 3,500 flying hours.

SURVEY IS MADE OF AMATEUR RADIO OPERATORS IN COAST GUARD SERVICE

A recent survey of all Coast Guard units disclosed that there are some 400 radio amateurs now serving in the United States Coast Guard.

The purpose of this survey, which was made by the Communications Division of Coast Guard Headquarters, Washington, D. C., was to organize amateur activities within the Coast Guard Auxiliary. The survey was made in the form of an "all units" letter.

With the conclusion of the war, the Coast Guard desires to organize the communications department of the Auxiliary. This will provide radio nets utilizing amateur stations of Auxiliary members for emergency and drill purposes. The Coast Guard Reserve and Auxiliary Act, as amended in September 1944, authorizes the utilization "in the conduct of duties incident to the saving of life and property, including air-sea rescue operations, or for any other purpose incident to the carrying out of the

functions and duties of the Coast Guard, any radio station placed at its disposition for any such purpose by any member of the Auxiliary." In other words, any amateur who is a member of the Auxiliary may place his station at the disposal of the Coast Guard for the purposes specified.

Headquarters is vitally interested in eventually enrolling as many amateurs as possible into the Auxiliary, particularly those who have had some previous duty in the armed forces.

From the information obtained from the survey, all district Coast Guard officers will be advised of the residence and call letters of amateurs located in their districts.

Opinions of the amateurs themselves express definite approval of the plan, and the following statement by one "ham" operator sums up the general feeling of the amateurs: "Coast Guard Headquarters is doing a commendable job in compiling and disseminating this material regarding amateur radio operators to the public, for it is only by public familiarization of the amateur and his work that he will be able to retain sufficient frequencies and Government cooperation to carry on his hobby after the war."

AGE LIMIT FOR RECRUITS INCREASED—NOW 17–25

The age limits for recruits for the Coast Guard has been increased to include young men between the ages of 17 to 25 years, both inclusive. Original enlistments may be for a 2- or 3-year period, at the option of the applicant. With the exception of former Coast Guard Reservists for whom the age limit is 30, plus the number of months they have been in the service up to 48 months, applicants will be limited to those who have not had previous military service.

RATINGS OPEN

The following ratings, in the Regular Coast Guard, are open to enlistment or re-enlistment for enlisted men of the Reserve on active duty:

Sea 1c	RT (all)	EM (Tel) (all)	ART (all)
Sea 2c			
AS	RdM (all)	AP (all)	AERM (all)
HA 1c	RdM (L) (all)	AMM (all)	PR (all)
HA 2c	SA (all)	AM (all)	Y (all)
StM 1c			
StM 2c	F 1c		
StM 3c	F 2c	AOM (all)	SK (all)
RM (all)	EM (all)	ARM (all)	PhM (all)

Male Reserve personnel with the designator "AN" (Aids to Navigation) will be considered for enlistment in the Regular Coast Guard regardless of the rating they hold. Applications of all such personnel will be referred to headquarters for appropriate action.

Petty officers, holding ratings listed above, desiring to enlist in the Regular Coast Guard, upon enlistment will be advanced temporarily to the petty officer rating they now hold in the Reserve. However, no assurance can be given that they will hold their rating after the postwar complement has been established and they will have to take their chances with personnel now in the Regular Coast Guard holding temporary ratings.

DETAILS OF RADIO AIDS TO NAVIGATION DEVELOPED DURING WAR ARE DESCRIBED

Details regarding several of the developments in aids to navigation, particularly in the field of electronics, can now be made public, and an attempt made to evaluate these in terms of peacetime merchant ship operation.

RACON

Closely related to radar is the RAdarbeaCON or racon which is an electronic beacon placed ashore at the most elevated position available to serve as an aid to navigation for surface ships and aircraft equipped with radar. When a signal from a radar transmitter is received by the beacon, the beacon's transmitter is automatically placed in operation and sends out an answering characteristic signal of considerable power. This response from the beacon is given a distinctive characteristic, serving to identify the particular radarbeacon to the navigator. These responses enable the navigator to fix his position in relation to the beacon by means of a simultaneous plot of both range and bearing of the racon from the ship on the scope of the radar.

The outstanding advantage of this radar beacon aid to navigation is that a single beacon in an area will suffice to enable the ship or aircraft to navigate in any weather conditions, if fitted with the necessary radar interrogating equipment, and at a much greater reliable range. Radar energy transmitted toward a normal target is greatly attenuated on its way to and during reflection from the target. Since targets for navigational purposes are usually small or poorly defined, only a small amount of energy is reflected and the reflected echo may die out before it can travel back over long distances to the radar receiver. Instead of depending on re-

flections for target indication, the racon is designed to put out a large amount of energy of its own which will allow dependable indication at a much greater distance.

At present, racons are almost exclusively used by aircraft, but considerable investigation and development work has been initiated and is now under way to adapt the present racon system for marine navigation. Completion of this development work and the eventual inclusion of racon in the present system of marine aids to navigation is contemplated in the near future.

ANRAC

Another wartime innovation is known by the coined word anrac, the name being derived from the words Aids to Navigation RAdio Control. The equipment was designed to black-out unattended aids to navigation by means of radio signals, but has been applied to control other types of aids, such as fog signals, electric bell strikers, etc. The remote system of control allows operation of aids only when necessary, thus conserving power, and preventing fog signals from annoying residents in the vicinity. The advantages will be greatest in those aids consuming relatively large amounts of power, which makes continuous operation costly and impracticable. Other advantages will be in controlling inaccessible aids, and the reduction in the number of personnel utilized in the operation of all types of aids.

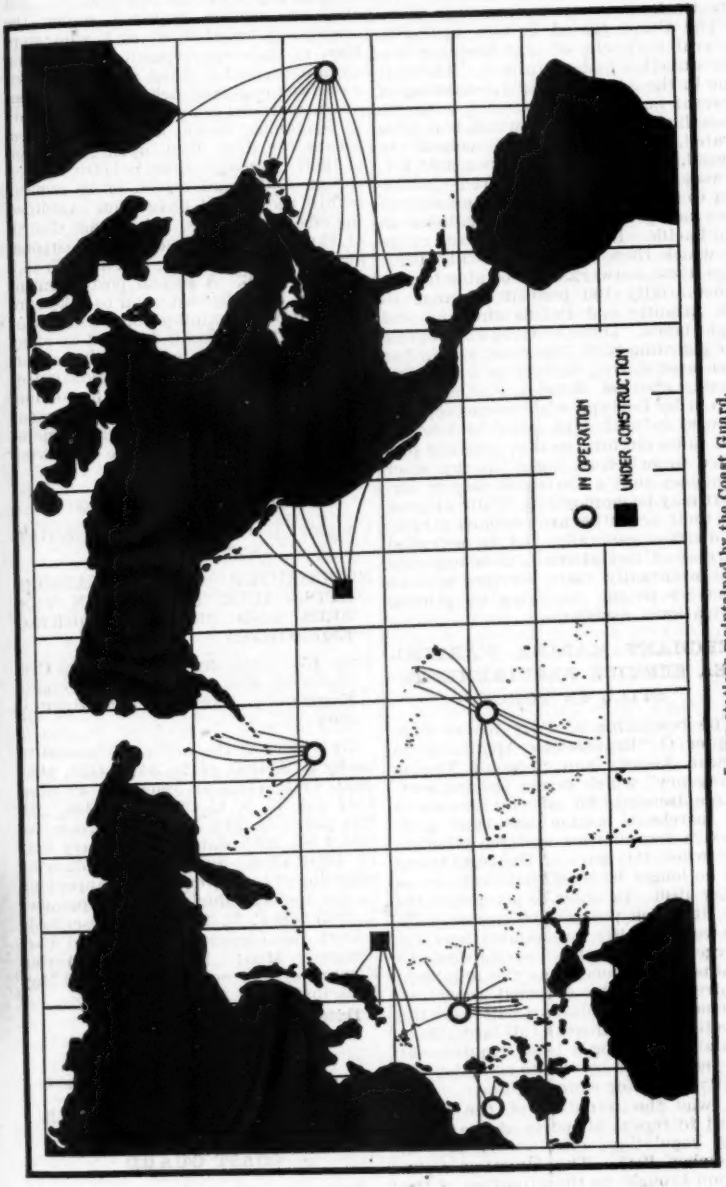
The system consists of a control station transmitting specially coded ultra-high frequency signals, and special receivers on buoys and other aids. The radio waves emanating from the control station transmitting antenna travel out of the buoys and other aids, where the receiving equipment converts the signal to direct current pulses which open or close electric relays or gas valves to extinguish or relight lanterns, or control the other types of aids.

The system was installed at Pearl Harbor, Midway, sections of Alaska and the Southwest Pacific, and most of the major ports on the east and west coasts of the United States.

HIGH FREQUENCY DIRECTION FINDING

In the direction-finding field great improvements have been made, particularly in the use of high frequencies. The use of direction finders in the high frequencies is not a new thing, but during the war there was developed equipment which was sufficiently dependable and accurate to justify the organization of large networks of these stations for use as a navigational and rescue aid. The development was primarily in the field of shore-based direction finders, which can supply bearings on positions to ships and aircraft. While improvements have been made in shipboard devices of this description, the fact that a sky wave rather than a ground wave is employed necessitates the application of judgment to the plotting of bearings which must be based on extensive training. For this reason, and because of the large size of the equipment which has to be used to get accurate results, ship-

ANRAC.
Aids to Navigation Radio Control.



Loran stations maintained by the Coast Guard.

board direction finding in high-frequency range is not at present very practical.

The Coast Guard is now operating several networks of high-frequency-radio direction-finder stations. There is one in the Atlantic, really consisting of several nets, which, together with the Canadian network with which it is integrated, extends from Greenland to Brazil. In addition, there is a gulf net, a west coast net extending from California to the Aleutian Islands, and several nets not yet permanently organized in the Pacific. Because of the great range at which these stations can take bearings, these networks will be able to give substantially 100 percent coverage in the Atlantic and Pacific shipping and flight lanes. These stations are at present guarding 8280 kilocycles, which has been used during the war as a high-frequency distress channel, and are connected by teletype with rescue centers, as well as with each other by teletype and radio circuits, so that they are prepared to switch on notice to any other frequency that a distressed ship or aircraft may be employing. While at present their activities are confined largely to distress generally and to potential distress of lost aircraft, it is expected that eventually their services will be extended to the supplying of general navigational assistance.

MERCHANT MARINE WARTIME SEA SERVICE REQUIREMENTS STILL IN FORCE

The rescinding of Part 155 of Subchapter O "Regulations Applicable to Certain Vessels and Shipping During Emergency" which covers the sea service requirements for officer's licenses in the merchant marine has been postponed a second time and the effective date when this part of the regulations will no longer be in effect is now set as 2 May 1946. In order to accelerate the rate at which prospective licensed officers would qualify for examinations, the emergency regulations established 18 months of sea service as the minimum requirement. The eventual repeal of the emergency regulations will leave the peacetime regulations in full force, these regulations having a basic requirement of 3 years of sea service to establish eligibility to sit for examinations.

It was the intention of the Coast Guard to repeal all parts of the emergency regulations effective VJ-day, to September 1945. The Maritime Commission brought to the attention of the Coast Guard certain effects of such repeal upon the personnel of the merchant marine. One problem was that of a large group of certificated men who had the sea service required under the emergency regulations and who were then in training preparatory to taking examinations for third mate and third assistant engineer tickets. The repeal of the wartime sea service requirements in September would have made it necessary for these men, upon completion of their training course, to return to sea for an additional period of 18 months before they could have been examined for officer's licenses. The Coast Guard, at that time, announced the postponement of the rescinding of Part 155 to 2 January 1946. A second postponement has just been decided upon to take care of additional training commitments of the Maritime Commission and to effectively facilitate the manning of the merchant marine until the termination of the activities resulting from the conduct of the war. This second postponement was announced in the Federal Register of 9 October 1945, in the following language:

TITLE 46—SHIPPING

Chapter I—Coast Guard: Inspection. and Navigation

SUBCHAPTER O—REGULATIONS APPLICABLE TO CERTAIN VESSELS AND SHIPPING DURING EMERGENCY

PART 155—LICENSED OFFICERS AND CERTIFICATED MEN: REGULATIONS DURING EMERGENCY AMENDMENT TO REGULATION

By virtue of the authority vested in me by R. S. 4405, 4417a, 4426, 4438, 4439, 4440, 4441, 4442, as amended, 49 Stat. 1544 (46 U. S. C. 375, 391a, 404, 224, 226, 228, 229, 214, 376) and Executive Order No. 9083, dated 28 February 1942 (3 CFR Cum. Suppl.), the following amendment to the regulations appearing in the Federal Register for September 5, 1945 (10 F. R. 11311) is prescribed:

Part 155 Licensed Officers and Certificated Men: Regulations During Emergency, is rescinded effective 2 May 1946, instead of 2 January 1945.

Dated: 5 October 1945.

L. T. CHALKER,
Rear Admiral, U. S. C. G.,
Acting Commandant.

NAVY TRANSFERS TWO AIR STATIONS TO THE COAST GUARD

Two air stations formerly operated by the Navy have been transferred to the Coast Guard. The Navy auxiliary

air station at Beverly, Mass., was decommissioned as a Navy facility and the station and its equipment transferred to the Coast Guard for use as an adjunct to the nearby Salem Air Station. The station was commissioned as an auxiliary station on 1 September 1945.

The Naval Air Station at Traverse City, Mich., was likewise decommissioned by the Navy and the property and equipment transferred to the Coast Guard. As the Coast Guard Air Station, Traverse City, Mich., it was placed in commission on 15 November 1945. Flight operations on a reduced scale started with a plane complement of 2 PBY–5A's and 1 JRF.

SEASONAL DECOMMISSIONING OF NAVIGATIONAL AIDS ON GREAT LAKES IN PROGRESS

The decommissioning of aids to navigation, incident to the regular winter closing of navigation on the Great Lakes, was announced by the Coast Guard early in November and is now in an advanced state of completion. Decommissioning of aids proceeds according to a well-established plan, taking into consideration the needs of navigation and ice and weather conditions normally to be expected. The plan, however, has of necessity to be sufficiently flexible to be workable when unusually severe conditions are encountered. Freezing weather and high winds occurring earlier than in average years sometimes make the removal of keepers from remote stations a hazardous task.

In the decommissioning and withdrawal of the aids to navigation it is the custom to first reduce the system to a skeletonized state, closing operations beginning in the upper lakes and proceeding downward as the weather becomes progressively severe. In Lake Superior, the Stannard Rock, Huron Island, La Pointe, Chequamegon Point, and Raspberry Island light stations will be closed about 1 December. Manitou and Rock of Ages will follow about 5 December, while Outer Island, Devils Island and Passage Island will suspend operations about 10 December.

In Lake Michigan, Coast Guard cutters will begin the removal of keepers at Pilot Island, Pottawotomie, Poverty Island, St. Martin Island, Minneapolis Shoal, Chambers Island, Peshtigo Reef, and Green Bay Harbor Entrance, about 1 December. A few days later, Peshtigo, White Shoal, Grays Reef Ile aux Galets, South Fox Island, North Manitou Shoal, and Lansing Shoal will be closed. About 15 December, Beaver Island, Escanaba, and Racine Reef will be reached, while South Manitou and Plum Island Range Rear will be left until about 15 January.

In Lake Huron, winter closing will be started slightly later, the first stations, Spectacle Reef and Martin Reef not being placed in winter status until about 5 December. Poe Reef and Detour Reef will be closed about 12 December.

The lighted buoys in the upper lakes will be withdrawn progressively, and in the order of their importance to late navigation. Unlighted buoys in harbors and main channels will generally not be withdrawn, and steel or wood spars, metal unlighted buoys, or wooden winter markers will be placed in lieu of the more important buoys withdrawn for the winter.

The degree to which the established schedule for the removal of keepers and aids can be adhered to depends entirely upon the severity of the weather, the Coast Guard delaying this work as much as practicable to accommodate vessels so long as traffic can be maintained. Since the consolidation of the Lighthouse Service with the Coast Guard in 1939, the Coast Guard's task upon the Great Lakes has been a twofold one. With the closing of navigation in early winter it had not only to remove the navigational aids but also render assistance when vessels were in distress. The variations in the weather conditions during the last 15 years are an indication of the conditions which may be expected almost without warning.

In 1944 the closing of navigation took place at a comparatively late date because of the mildness of the weather, and little difficulty was experienced in withdrawing personnel and aids in an orderly manner as traffic ceased. Likewise, 1943 was a year in which the closing of navigation was attended with comparatively little difficulty in the removal of the navigational aids.

In 1942, when every effort was being made to move as much ore as possible before winter, the weather remained favorable from 20 November to 1 December, but on 2 December, Lake Erie experienced one of the worst storms in its history, during which a tug and barge sank with the loss of 32 lives. The cutter *Crocus*, upon being dispatched to render any assistance possible, experienced one of the more perilous journeys of her entire career. Several other cutters also experienced great difficulties.

The fall of 1939 furnished one of those seasons rare on the Great Lakes when navigation could be carried on throughout November and into December without interruption from heavy

gales, or ice-making cold weather, and when aids to navigation could be removed according to schedule. Summer sailing schedules were mostly maintained into December notwithstanding that some delays ensued when dense fogs prevailed on the upper rivers and Lake Superior. Seventy-two grain laden vessels passed down at the Sault during the 2 weeks 15–29 November and the freight movement of 10,437,879 net tons for the month was the highest of any November since 1928, and previously exceeded only in November 1923 and November 1917. When the steamer *Captain C. D. Secord*, the last vessel of the season to come down from Lake Superior, locked through the canal on 14 December, no shore ice had formed on St. Marys River, and the Straits of Mackinac were free of ice formation when the *Maritana* passed through that waterway to Lake Michigan on 20 December.

Aside from several exceptionally heavy gales on the upper lakes which caused vessel delays but no damage, the closing days of navigation in 1938 were devoid of unusual incidents. The first subzero temperature, 4 below, was reported from Duluth on the night of 21–22 November and this cold wave was accompanied by heavy snow and gales which held 16 vessels, upbound for storage cargoes, in shelter behind Whitefish Point. The lowest temperature recorded at Sault Ste. Marie during the cold spell on 25 November, of 10° above zero, was not of sufficient duration to make ice in the fast-moving water of the St. Marys River. During the weeks of 27 November and 5 December when navigation on Lake Superior was over, with the exception of final grain cargoes, summer sailing conditions prevailed. When the *Sir Thomas Shaughnessy* locked down on 11 December with the last cargo of grain, the thermometer at Sault Ste. Marie registered 40° and no ice was encountered in the St. Marys, St. Clair, or Detroit Rivers as the vessel proceeded to Lake Erie. There was no ice to be seen in the Straits of Mackinac on 12 December when the *Wm. P. Cowan*, upbound, was the last vessel to pass through that waterway.

In 1937 temperatures low enough to make thick ice were not recorded until 28 November when it was zero at Duluth and 10° above at Sault Ste. Marie. The *Sir Thomas Shaughnessy* passed down at the Sault Ste. Marie locks on 11 December. Not enough ice had formed, however, to greatly impede her passage through the lower St. Marys River, although assistance of a tug was required. A cold wave occurred particularly in the vicinity of Lake St. Clair and the Detroit River and increased in intensity; during the night of 8 December and the morning of 9 December the mercury sank to 8° above zero at Detroit and to 6° above at Toledo. By the time the *Wolf* was due to reach the lower end of Livingstone Channel, heavily windrowed ice, 7 inches thick, had formed in the vicinity of Bar Point and extended into Lake Erie as far east as Pelee Passage. In the course of a few hours, 9–10 December, nine vessels became fast in a blockade. A serious portent of a bad situation in process of development unless relief came quickly was the position of the steamer *W. W. Atterbury*. She was stopped crosswise of the Livingstone Channel with her bow against the Canadian side. The *Henry Ford II*, 608 feet long, was in the ice outside the channel; the whaleback steamer *South Park*, downbound, was fast in the upbound channel; the *Wm. M. Connelly* was out in Lake Erie at Bar Point, while others in the blockade included the sand sucker *John M. McKerchey*, the tug *Buttercup* and the lighthouse tenders *Crocus* and *Aspen*. The Coast Guard cutters *Tahoma* from Cleveland and *Frederick E. Lee* from Toledo were dispatched to the scene as were the icebreaking tugs *Wyoming* and *Idaho*. By combined effort the vessels were released one by one and the jam was cleared up late on Saturday, 11 December. This had been the first blockade of consequence to occur in the Detroit River and Lake Erie since December 1918, when a large fleet of wheat-laden vessels was held in the heavy ice at the western end of Lake Erie.

It became necessary to accelerate the relief of buoys and other floating aids to navigation, taxing the capacity of the district tenders to accomplish the work without loss of equipment. Conditions were particularly severe in Saginaw Bay where the work was accomplished by the tender *Aspen* and in Lake St. Clair and Detroit River where the tenders *Marigold* and *Dahlia*, in addition to the *Aspen*, were engaged. The following is quoted from the report of passage of the tender *Marigold* across Lake St. Clair:

"Two to four inches of ice were encountered for the entire distance across Lake St. Clair. At the entrance to the Detroit River, windrowed ice made progress of the tender very slow. In fact, the ice finally closed in so securely that it required 2 hours of maneuvering to proceed approximately 300 feet to open water."

Difficulty with ice was also experienced by the tender *Crocus* in the relief

of buoys in the west end of Lake Erie, but the work in all districts was accomplished with relatively minor loss of equipment.

Continuation of operations under recurring ice conditions caused further blockades. The steamers *James Watt* and *Fellowcraft* were stranded in the ice at the mouth of the Detroit River on 14 and 15 December and the *E. C. Pope*, on voyage from Conneaut to Detroit, was stopped 14 miles out in Lake Erie near Pelee Island. Still later in the month the *Watt* and *Pope* were stranded off Colchester Light and the cutter *Tahoma* was sent to rescue them. In a final gesture of a futile effort to complete the movement of coal up the Detroit River the *James Watt* was on 29 December grounded at the mouth of the Detroit River and she was not refloated until New Year's Eve, the *E. C. Pope* having lightered 700 tons of her cargo.

In 1936 ice-making temperatures on Lake Superior occurred as early as 23 October when the thermometer registered 10° above zero at Duluth, and only 4° at Port Arthur. Cold weather continued with more or less severity throughout November and interrupted what it was hoped would prove an exceptionally large late movement of iron ore. On the night of 9 November it was zero on the iron ore ranges and 8° below at Port Arthur. There were 50 vessels on the waiting list at Duluth-Superior, and when a spell of moderating weather set in on 13 November, the entire fleet was loaded and cleared.

Severely cold weather at Sault Ste. Marie began on 23 November when the temperature dropped to 4° above zero. The cold continued until 8° below zero was recorded on 29 November, causing from 6 to 8 inches of ice formation in the vicinity of Big Point in the St. Marys River. One vessel after another was stopped during the following 36 hours until there was a fleet of 17 downbound and 6 upbound steamers fast in the ice. Threat of another serious ice blockade, as occurred in 1926, 1927, and 1929, was dispelled on 1 December when the tugs *Iowa* and *Sabin* came down from the Sault and broke a channel through to Detour. The cutter *Escanaba* was called from her station on Lake Michigan and she remained in the St. Marys River for more than a week keeping the channel open while near zero temperatures prevailed.

By 1 December the last iron ore cargo was off Lake Superior; the steamer *Henry Steinbrenner* had arrived at Duluth with the season's last cargo of coal. After midnight 30 November only a little more grain remained to be brought down from Lake Superior.

Winter set in early in 1933. Fortunately nearly all the ore had been brought down and only a few cargoes of a declining grain trade remained before ice formed in the St. Marys River. Great difficulty was encountered at times, however, in loading coal at the Lake Erie docks and in navigating the carriers toward Lake Superior for delivery.

As early as 12 November Duluth and Port Arthur reported below-zero temperatures and the cold wave extending over all the lakes continued for almost a week. Ice became solid in the St. Marys River between Sweets and Everens points and although there ensued brief periods of moderating weather on Lake Superior, low temperatures persisted in the region of St. Marys River. Resultant of this phenomenon there were several days between 27 November and 13 December when this trough of cold, as it were, showed a below zero temperature at the Sault with considerably warmer weather on Lake Superior. An extreme example occurred on 13 December when thermometers registered 18° below zero at Sault Ste. Marie with 10° above zero prevailing at Marquette.

About 7 December there was a violent blizzard on Lake Superior, and the keepers at the Passage Island Lighthouse succeeded in operating their fog signal for the 4-day period of the storm only through heroic efforts. However, most of the navigational aids had already been placed in a winter status and no losses of equipment occurred.

During the extended period of cold an ice blockade was narrowly averted, not by pack-ice as in some former years, however, but by the formation of solid ice. On 1 December the steamer *Maritana*, downbound, was stopped at Point aux Frenes in Lake Munuscong and in the course of a few hours the steamers *Lebanon, Ace, Lehigh, Ralph Gilchrist*, and *Thomas Britt* coming down dropped behind her unable to proceed. While preliminary steps were being taken to prevent a serious blockade, the Canadian steamer *Tenvoyle*, upbound on 2 December, cut a course through the ice and the stalled vessels were released.

The whaleback steamer *Henry Cort*, noted as an icebreaker and frequently used in operations of that kind, was the last vessel of the season to lock up and down at the Sault. On voyage to Lake Linden she passed up on 7 December. With the thermometer registering 18° below zero and ice hourly growing

thicker in St. Marys River, she locked down on the 13th. She was almost 24 hours in reaching open water in Lake Huron.

The last 3 weeks of the 1932 season of navigation were characterized by recurring cold waves as severe as the upper lakes have experienced in many years. Fortunately the warmth of the water prevented the freezing over of St. Marys River until after the last vessel was off Lake Superior.

The first severe weather at the head of the lakes set in unusually early, the thermometer having dropped to 4° below zero at Duluth on 15 November, with zero at Port Arthur and 16° above at the Sault. A second cold wave, 18–19 November, brought the temperature at Duluth down to 10° below zero, making 5 inches of ice within the harbor. Chequamegon Bay froze over and there was 5 inches of ice inside Ashland breakwater. On 29 November a warm wave raised the temperature to 52° at Duluth, but after that recurring cold waves continued until the closing of the locks on 13 December. As the last boats were on their way down on Lake Superior, 6 to 7 December, Duluth was 22° below zero, Port Arthur 20° below and the Sault 2° below zero, and the temperature at Duluth remained at or below zero, day and night, until 9 December.

During the evening of 5 December the steamer *Mariposa*, with a cargo of grain for Buffalo, cleared from Duluth, being the last vessel out. She passed down at the Sault early on the 7th and was followed later in the day by three Canadian steamers from Fort William. These vessels closed the freight season for the St. Marys Falls Canals. Navigation through the Straits of Mackinac, however, continued until after the middle of December. The *F. B. Squire* cleared South Chicago on 13 December with a cargo of grain for Buffalo. She went through the Straits and down Lake Huron, but the cold wave from the South with near-zero temperatures made heavy ice in St. Clair River and her progress was impeded until 27 December when she passed down at Detroit, the latest period of the year known in Detroit River traffic since 1921.

The whaleback steamer *Henry Cort* that has served well as an ice breaker whenever called upon was the last boat to navigate the Straits. She passed down-bound on 17 December, and because of her ability to overcome ice conditions, she reached Detroit on 19 December.

The upbound season of navigation was brought to a close by the steamer *Wm. F. Fitch*. With a cargo of coal for Milwaukee she passed up at Detroit on 12 December.

Lake shipping had dwindled to an almost negligible volume by 30 November. The last cargo of iron ore for the year was on the dock at Cleveland 25 November. Only three cargoes of soft coal were delivered at Duluth in December and not many more were placed on Lake Michigan docks in December.

The close of the 1929 season of navigation in the Great Lakes was marked by mild-weather conditions, and no difficulties in lighthouse procedure in this connection were encountered in any of the three Lake districts, and there were no notable incidents.

Reports received from the three lighthouse districts then comprising the Great Lakes indicated that the operations of the Lighthouse Service during the hazardous and trying days of the close of navigation for the season of 1927 were accomplished safely, notwithstanding severe weather conditions. Practically the entire month of December was very cold, accompanied by unusually strong gales and the formation of heavy ice in sheltered locations. Four merchant vessels were driven ashore as a result of 1 of these gales during the first week of December, 3 being completely wrecked. Conditions in the St. Marys River caused a blockade of the channels, which could not be freed by powerful ice-breaking tugs, and about 25 steamers were forced to abandon their downbound passage and go into winter quarters at Sault Ste. Marie with their cargoes.

The work of the Lighthouse Service in the closing of stations and picking up of gas buoys was conducted with difficulty but without accident. In the Apostle Islands in Lake Superior it was impossible for the lighthouse tender *Amaranth* to reach shore with the keepers of Devils Island and Outer Island Light Stations, and they were accordingly landed on the ice and proceeded into Bayfield on foot. The keepers of Passage Island Light Station were the last ones brought ashore and were landed at Rossport, Ontario, by the Canadian Government on 22 December.

At Spectacle Reef, on Lake Huron, it was necessary for the keepers to leave the building by the windows, owing to the great masses of ice which had formed on the pier blocking the doors.

No unusual incidents occurred on Lake Michigan with the exception of the partial wrecking of the fog-signal house at Muskegon by the severe gale of 8 December. This gale also extended to Lake Erie, and at Buffalo the wind reached a velocity of 80 miles an hour,

causing the water in Buffalo Harbor to rise about 7 feet and causing loss or damage to several minor lights and buoys in the vicinity.

The season of navigation on the Great Lakes closed for the year 1926 under severe winter conditions but without loss or serious injury either to the men or property of the Lighthouse Service.

In the tenth district, embracing Lakes Ontario and Erie, the work of removing buoys was hampered but successfully accomplished, with the exception of a few spars which had to be left under ice in Maumee Bay, entrance to Toledo. The tender *Crocus*, after finishing its own duties, did good work in recovering buoys of the eleventh district in the lower Detroit River, which were carried out of position and damaged by ice, and brought them safely to Detroit. A severe blizzard was experienced in Buffalo on 16 December, and during this gale a steamer dragged its anchor and parted the submarine cable leading to Buffalo Lighthouse.

Bad weather commenced in the eleventh district, Lakes Huron and Superior, during November, and subzero temperatures were reached at several points on Lake Superior. As a result nearly 150 steamers were icebound in the St. Marys River early in December, and were finally released after several days' work by the powerful ice-breaking car ferry *Ste. Marie*, brought from the Straits of Mackinac for that purpose. During the time that they were marooned some of these vessels became short of coal and provisions, and the difficulties of supplying and releasing them made this one of the most serious ice blockades in Great Lakes history.

In spite of the severe ice conditions encountered, the tender *Clover* was able to relieve safely all of the 34 lighted buoys in these waters except 1, which was carried ashore by the ice, but was beached in a safe position for the winter. The continued stormy weather, accompanied by severe cold, made the relief of keepers at island light stations in Lake Superior very difficult, but this was accomplished by the tender *Marigold*, which finally reached Duluth for the winter, on the evening of 19 December. Many keepers at Lake Superior shore stations encountered 4 feet or more of snow in proceeding from their stations to their homes.

Blizzards and below-zero weather were experienced on Lake Michigan, from 12 to 18 December, causing some delay in Grays Reef and North Manitou Shoal Lightships reaching winter quarters. The tender *Hyacinth* rendered assistance to a steamer in trouble off Sheboygan, Wis. Most of the severe weather in the twelfth district occurred after the closing of stations for the season.

PUBLICATION OF MILITARY TRAINING DATA TO ASSIST IN VETERAN EMPLOYMENT

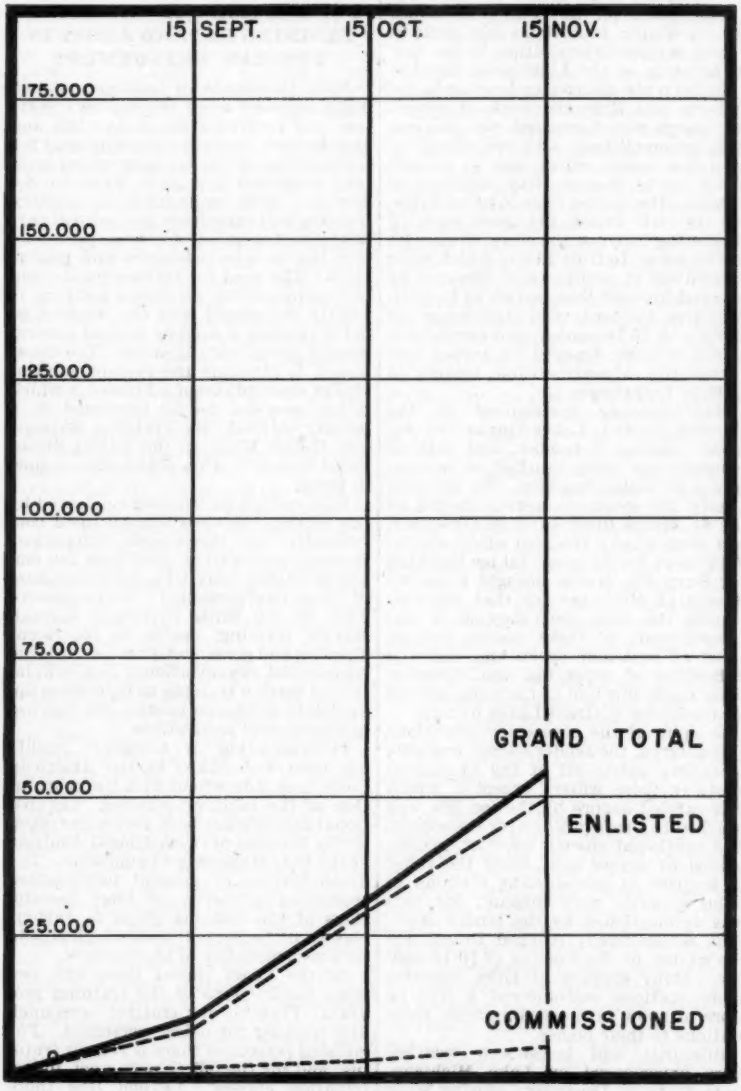
With thousands of men and women being released from the military services and returning to civilian life and employment, there is a growing need for information on the training which military personnel are given while in the service. This evaluation of military training and experience is a natural part of the reabsorption of service personnel into the various industries and professions. The need for making public definite information on these matters is clearly recognized, and the work of so doing is being shared by several governmental and private agencies. The Coast Guard is planning the prompt publication of descriptions of all training which it has provided for its personnel, in a booklet entitled "My Training, Ratings, and Duties While in the United States Coast Guard." This publication is now in press.

Information on training conducted by the military services divides itself conveniently into three main categories: General information, useful to the employer dealing only with small numbers of ex-service personnel; comprehensive data on job skills developed through service training, useful to placement agencies and personnel directors of large commercial organizations; and evaluation of service training to determine appropriate academic credits, for the use of educational institutions.

Determination of academic credits has been undertaken by the American Council on Education, with the cooperation of the military services. Occupational analysis has been ably undertaken by the Division of Occupational Analysis of the War Manpower Commission. The dissemination of general information, consisting primarily of brief descriptions of the training given to various classes of personnel, seems logically to be a responsibility of the services.

In the Coast Guard there are two main subdivisions of the training program: Training for enlisted personnel, and training for officer personnel. For enlisted personnel there is recruit training, and for the officer personnel, indoctrination classes. Beyond this there are various resident courses preparing for specialized duties. Coast Guard personnel also receive training by assignment to various schools operated by

DEMOBILIZATION



Coast Guard personnel demobilized.

other military services in accordance with training agreements. Many correspondence courses are also available to both enlisted and officer personnel.

To the civilian having only a limited knowledge of the activities of the Coast Guard a description of the duties of the various ratings is essential, as many of these ratings have no apparent relation to the job terminology of civilian life. A brief statement of the relation of the different petty officer "classes" is also required.

In the Coast Guard, as in the Navy, the enlisted personnel are divided into two groups, nonrated and rated personnel, those with ratings being referred to as petty officers. All inexperienced recruits are taken into the service as apprentice seamen, advancing from this through the seaman branch, the engineer branch, the steward's branch, or the medical branch.

The lowest of the rated designations is that of petty officer third class. Among the rated personnel, two designations are in use, one of these, such as quartermaster, referring to the specialty or the nature of the duties performed, and the other the "class" referring to the degree of advancement. There are ratings of this level in many specialties. Above this are the grades of second class, first class, and chief petty officer. Following are the ratings in use in the Coast Guard:

Nonrated:
- Apprentice seamen.
- Steward's mate, third class.
- Seaman, second class.
- Fireman, second class.
- Hospital apprentice, second class.
- Steward's mate, second class.
- Seaman, first class.
- Fireman, first class.
- Hospital apprentice, first class.
- Steward's mate, first class.

Rated:
- Petty officer, third class.
- Petty officer, second class.
- Surfman.
- Petty officer, first class.
- Chief petty officer (acting).
- Chief petty officer.

The following are brief descriptions of resident training courses for enlisted personnel, arranged alphabetically by subject or rating:

Academy Preparatory.—Prepares men for the competitive entrance examinations of the Coast Guard Academy and eventual commissioning in the regular service.

Aids to Navigation.—This course trains men in the repair and servicing of aids to navigation, such as lighthouses, lightships, radiobeacons, fog signals, and buoys. It covers the mechanical, electrical, and radio equipment of these aids.

Amphibious (Landing Craft).—Covers the operation of small boats of many types, including piloting and engine operation.

Aviation Machinist's Mate.—A course for the training of men in the repair and overhaul of aircraft and airplane engines.

Aviation Machinist's Mate (Helicopter).—This course is for men with previous experience in aircraft repair and maintenance, to familiarize them with the special features of helicopters.

Aviation Metalsmith.—Covers sheet metal working as applied to aircraft, and includes welding electro-plating, and wire splicing.

Aviation Radioman.—Covers the operation of all radio, radar, and loran equipment employed in aircraft, aircraft and ship recognition, ordnance, and communication by flags and blinker.

Carpenter's Mate.—Classes cover ship's carpentry, boat building, damage control, and the simpler phases of pipe fitting, sheet metal work, and welding.

Classification Interviewer.—This course for both men and women, covers the work of interviewing, testing, and performing other duties connected with the training and classification of personnel.

Commissary Stewards.—The course for Spars only, provides a groundwork in nutrition, meal planning, food preparation, and food serving.

Coxswain and Boatswain's Mate.—Covers those branches of seamanship which are the province of deck petty officers, including the handling of small boats, mooring gear of ships, and the practices of piloting and navigation. Also included are the usual ship's drills, such as fire, collision, and man-overboard.

Coxswain and Boatswain's Mate (for Spars).—This course corresponds to the duties usually assigned to Spars holding these ratings, which are those of barracks leaders handling large groups of personnel.

Damage Control and Fire Fighting.—Ship construction, fire fighting, chemical warfare, shallow water diving, and the use of welding and cutting tools are the subjects covered.

Direction Finder.—Students, usually radiomen, are given instruction in the theory and operation of high-frequency direction finder equipment.

Electrician's Mate.—Classes cover the installation and repair of electrical circuits, interior communications systems,

the electrical parts of main and auxiliary engines, and such equipment as motors, generators, control panels, and searchlights.

Electrician's Mate (Telephone).—Course deals with the installation and maintenance of land telephone and telegraph lines and submarine cable facilities.

Electrician's Mate (Telephone) (Advanced).—Teletype installation and maintenance and other advanced phases of telephony are covered in this course.

Explosives Loading.—Designed to train men who will supervise the loading of explosives as cargoes in merchant ships. The special hazards of various types of explosives, safety practices, and fire fighting, are the principal subjects.

Fireman.—Men of this rating serve as assistants in the boiler and engine rooms of ships. Classes cover the basic principles of steam, Diesel- and gasoline-propelling plants, engine-room watch standing, and maintenance and repair work.

General Office Training (spars only).—In addition to typing and filing, students become familiar with Coast Guard regulations and procedures.

Gunner's Mate.—Trains men in the care and use of all weapons used by the Coast Guard, and the handling and stowage of ammunition.

Gyro Horizon and Directional Gyro.—A course in the theory, use, and care of the gyroscopic instruments used in navigation.

International Business Machine Operator (including spars).—A course for both men and women in the operation of tabulating machines.

International Business Machine Wiring (including spars).—This course covers the wiring of alphabetic counting machines to perform the various operations within the scope of such machines.

Machine Shop Practice.—The graduate of this course is qualified to serve as a machinist's helper, and is familiar with lathes, drill presses, milling machine, and other shop tools.

Machinist's Mate.—This course covers the operation and maintenance of the power plants of the various types of Coast Guard vessels. Subjects taught include the operation, repair, and maintenance of all main and auxiliary machinery.

Merchant Marine Hearing and Examining Unit Reporter (including spars).—Trains men and women in the recording and transcribing of testimony at merchant marine hearings.

Motor Machinist's Mate.—This course prepares men for duty in the maintenance and operation of Diesel machinery, and also includes the operation of gasoline engines.

Motor Machinist's Mate Advanced.—This advanced training in Diesel engine operation and maintenance is given in the plants of various engine manufacturers.

Motor Maintenance and Driving (including spars).—This course trains both men and women in the driving and maintenance of the various types of motor vehicles used in the Service.

Officer Candidate (Reserve).—This course prepares enlisted men for a commission in the Coast Guard Reserve. General duty subjects include navigation, ordnance and gunnery, communications, and damage control. In addition, those with previous engineering experience or aptitude, take subjects qualifying for engineering duty.

Officer Candidate (Women's Reserve).—A general indoctrination course for enlisted women who are to be commissioned.

Pay and Supply (including spars).—This course, for both men and women, leads to commissioned rank and assignment to pay and supply duty.

Pharmacist's Mate—Hospital Apprentice (including spars).—This course, for both men and women, covers first aid, care of patients, elementary pharmacy, and ward management. Spars are trained chiefly for food preparation, nursing, and laboratory tasks.

Pre-Radio.—A refresher course covering the elementary principles of mathematics and physics, to qualify students for basic radio training.

Port Security.—A course covering fire fighting, police methods, chemical warfare, and antisabotage.

Quartermaster.—The course includes navigation, signalling, and the duties of the navigating bridge of a ship.

Radar Operator.—This course covers the operation of radar equipment and its application to military purposes.

Radioman (Operator).—A course in the operation of radio communications equipment, including radio-telephone procedure.

Radioman (Operator).—A course for spars only, similar to that for men except that it is restricted to shore station practice.

Radio Matériel.—A course for both men and women in the installation, maintenance, and repair of radio equipment.

Radio Matériel (Advanced).—This course covers the more advanced phases of the maintenance of all types of electronic equipment.

Recruit Training.—This is the basic training given all recruits, and covers

the fundamentals of a military life, and the duties of a seaman ashore and afloat.

Recruit Training (Spars).—The course covers the fundamentals of a military life, and the duties usually assigned to a Spar seaman.

Sentry (Dog).—A course in the use of dogs in patrol and sentry duty, and the care of these animals.

Sentry (Horse).—A course in the use of horses in patrol and sentry duty, and the care of these animals.

Ship's Cook (including Spars).—Prepares men for duty of cook on board ship or at a shore station.

Ship's Service Man, Laundry.—Instruction covers the use of laundry machinery, and the decontamination and disinfection of clothing.

Signalman.—This course covers communication by means of semaphore, flags, and the identification of ships and aircraft.

Sonarman (Operator).—Covers the operation of sonar equipment and its application to modern warfare.

Sonarman Overside (Operator).—This course covers the use of overside sound equipment.

Steward.—Training covers the duties of supervising an officer's mess, including the preparation of food.

Steward's Mate.—The course is for men who will serve food in an officer's mess, assist in the galley, and care for officer's quarters.

Storekeeper (including Spars).—A course in the clerical duties connected with pay and supply work, including the issuance of clothing, commissary and other stores.

Watertender.—Training covers the elementary portions of steam engineering, and the duties in a ship's fire and engine room.

Yeomen (including Spars).—A course in typewriting, filing, and other clerical duties performed aboard ships and at shore stations.

GROTON TRAINING STATION ONE OF COAST GUARDS MAJOR PROJECTS

One of the Coast Guard's major construction projects during the war just past, was the Groton Training Station, in Groton, Conn. This station, situated across the Thames River from New London and only a few miles from the Coast Guard Academy, eventually had facilities for the training of 3,000 men at a time. It is located on the site of the 71-acre estate formerly owned by the late Commodore Morton F. Plant, which was purchased by the State of Connecticut and turned over to the Coast Guard in March 1942. It was the second largest Coast Guard training station in the country, being next in size to the station at Manhattan Beach, N. Y.

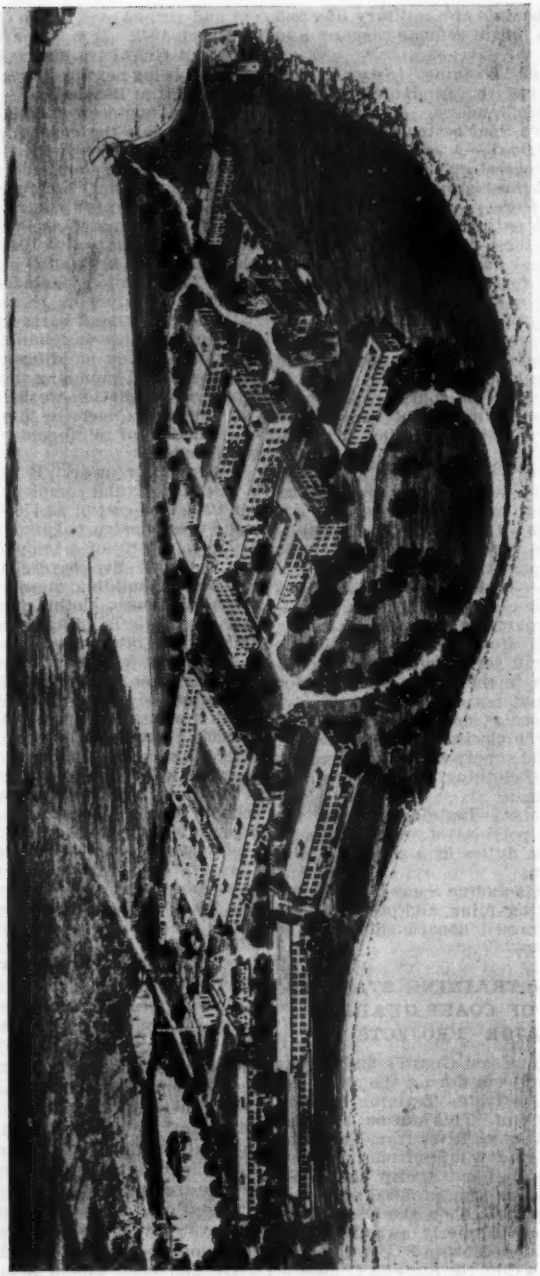
The civil engineering division at headquarters made the general preliminary lay-out, and worked with the architect in developing the plans, and was responsible for the final approval of these plans. The initial contract for construction, designated as Project A, was awarded February 10, 1942, and completed May 19, 1943, at a cost of $1,602,480. This project included the construction of students' barracks, mess hall and galley, staff barracks, academic building, engineering building, alterations to existing buildings, miscellaneous items and plumbing, heating, electric, and ventilation work. The structures were of a more or less permanent construction, of reinforced concrete and concrete block.

Contract for project B was awarded 2 March 1942, and completed 1 September 1943, at a cost of $2,479,057.38. The structures constructed under this project were mostly of a temporary nature and included five barracks buildings, engineering building, mess hall and galley, powerhouse, clothing locker building, institute building, roads, walks, and various other miscellaneous items.

A contract was awarded on 29 June 1945, for three trainer buildings and for alterations to one of the temporary barracks for use by Spars, at a cost of $72,969. This work is practically completed, but in lieu of Spars the altered barracks will be used for petty officers.

The infirmary and pharmacist's mate school building was an outstanding structure, being described in several architectural and engineering publications. The features which were favorably mentioned were those constituting its functional arrangement, for which the architect was largely responsible. This building and the Coast Guard Institute building were among those of permanent construction.

Because of the large number of persons who would occupy the various station buildings, and its location within the corporate limits of a comparatively small community, adequate utilities had to be provided. In compliance with the wishes of the public health service of the State of Connecticut, there was designed and installed a very complete sewage treatment plant to serve the entire station. As a result nothing but pure water was ever discharged into the surrounding portions of the Thames River and Long Island Sound.



Coast Guard Training Station, Groton, Conn.

Water was obtained from the Groton municipal system, but the demands of the station were of such an amount that it was necessary to install a 50,000-gallon storage tank to take care of peak loads. Fire protection was provided by a system of mains and pumping equipment supplying salt water. These fire mains were interconnected with the fresh-water supply so that this water was also available if needed.

Road work and fencing erected by separate contracts cost approximately $10,000. The contract for architectural services in connection with Projects A and B, referred to above, amounted to $154,130.

Since it was first commissioned, the Groton Training Station has provided many forms of training including Coast Guard Academy preparatory training, refresher courses, advanced courses and rating courses for motor machinist's mates, carpenter's mates, electrician's mates, pharmacist's mates, radiomen, radio technicians, radar operators, yeomen, storekeepers, signalmen, cooks and bakers, gunner's mates, quartermasters, and others. Approximately 13,500 men were trained at the station.

The total cost of the Groton project was $4,165,000. This cost, divided by the number of persons trained at the station works out to about $250 per person. The cost per person trained is actually considerable lower, as the station was also the headquarters of the Coast Guard Institute, an organization which provided correspondence training for thousands in the service. Also to be taken into consideration is the fact that the plant still has many years of useful life, and will be utilized for peacetime training needs.

A study is now being made of the present and future training needs of the Coast Guard, and plans are being formulated for the peacetime utilization of the Groton Training Station.

NEW INSTRUCTIONS ARE ISSUED FOR EXPANDED COAST GUARD AUXILIARY

New instructions for the Coast Guard Auxiliary have just been prepared and issued by the Auxiliary division of Coast Guard headquarters. They are in looseleaf form and are intended to be kept up to date by the adding of new sheets as changes become necessary. The instructions consist of three main sections, this arrangement being made necessary by the recent expansion of the functions of the Auxiliary to include among its members, pilots of airplanes and operators of amateur radio stations, as well as operators of small boats. The instructions for each of these three groups are assembled in separate parts of the new publication, instructions applicable to all three groups being grouped separately. These instructions supersede Commandant's letters to the district Coast Guard officers dated 2 June 1945, on the subject Coast Guard Regulations, Delegation of Authority Under, which letters are canceled hereby.

The table of contents shows the instructions to be divided into eight chapters as follows:

Chapter 1.—Definitions.
Chapter 2.—Purpose, Organization, and Administration.
Chapter 3.—Personnel.
Chapter 4.—Assignment to Duty.
Chapter 5.—Facilities.
Chapter 6.—Reimbursement.
Chapter 7.—Benefits, Rights, and Privileges.
Chapter 8.—Forms and Reports Required by Headquarters.

Sufficient copies are being distributed so that each district Coast Guard officer, each director, and each district division and unit officer in the field will have a copy. Because of the care required in keeping the instructions up to date, it will not be feasible to issue a copy to every member.

AUXILIARY CONFERENCE TO BE HELD IN WASHINGTON 12–13–14 DECEMBER

A National Training Conference of the Coast Guard Auxiliary will be held in Washington on 12–14 December. This will be attended by representatives of Auxiliary units in the various Coast Guard districts. The purpose of the conference is to afford an opportunity for a general discussion of the present problems connected with the Auxiliary, particularly the laying out of a plan of activity to be followed in the coming year, and the provision of adequate training for members of the organization. According to tentative plans, the district Auxiliary training officers will meet with the directors of the Coast Guard Institute, the chief of the headquarters' training division, and others for the purpose of developing and coordinating a nationwide program of education and training for auxiliaries. The directors and Auxiliary district commanding officers will meet separately with the chief of the Auxiliary division and other headquarters' officers to discuss administrative matters connected with the organization.

It is expected that shortly after the conclusion of the meetings, Headquarters will be able to announce the general outlines of a comprehensive training program in which the Coast Guard Institute will play an important part.

PERSONNEL OF HEADQUARTERS INSPECTION DIVISION

A list of officer personnel assigned to the Merchant Marine Inspection Division, headquarters, follows:

Commodore Norman B. Hall, USCG; Capt. R. E. Coombs, USCGR; (Merchant Marine Casualty Review) Commander W. W. Storey, USNR; Lt. (jg) Virginia S. Newell, USCGR (W); Lt. (jg) John H. FitzGerald, USCGR; Lt. (jg) Janet M. Cook, USCGR (W); (Vessel Inspection and Manning Standards) (Commander Kark G. Nielsen, USCGR; (Review, Development and Special Assignments) Capt. Joseph A. Kerrins, USCG; Commander David T. Smith, USCGR; Commander Philip A. Ovenden, USCGR; Commander Edward P. White, USCGR; Lt. Comdr. Paul E. Savonis, USNR; Lt. (jg) Amie H. Medary, USCGR (W); Lt. (jg) Kenneth R. Langler, USCGR.

ADDITIONAL CLASSES OF TEMPORARY RESERVISTS BEING DISENROLLED

Members of the Coast Guard Temporary Reserve serving the Coast Guard as civil service employees were disenrolled on 30 November, at which time Temporary Reservists serving as officers on Great Lakes vessels and Temporary Reservists serving as pilots were also released. Members of the Temporary Reserve, employed by the Coast Guard in a civil service status, and serving on merchant marine inspection duties, have not yet been disenrolled

SPARS PERFORMING SATISFACTORILY AS RADIO TECHNICIANS

The last of several classes of SPAR radio technicians has just completed a course of training at the Coast Guard Base, Staten Island, and will immediately be assigned to duty. This and several other small groups of SPARS have been subjected to a novel combination of correspondence course and in-service training, the results of which have been very satisfactory.

Assigned to the Staten Island base, the last group of girls were assigned to radio technician duties, and at the same time were enrolled in a radio technicians correspondence course with the Coast Guard Institute. Insofar as practicable, their work assignments were kept parallel with their studies, and additional instruction on the job was also provided. Their work assignments did not take the entire day. The training and schooling period was 5 months in length. Classes of this character were held in the third, fourth, and fifth naval districts.

SPARS who were trained as radio technicians made outstanding grades in their studies and also very satisfactory records after normal assignment to duty, despite the fact that the nature of the work was such that it was at first thought that women would not be suited to it. This adds one other type of job qualification to the list held by SPARS, which may lead to permanent peacetime employment.

PROCEDURE FOR PURCHASE OF SURPLUS COAST GUARD FIREBOATS OUTLINED

Coast Guard fireboats being decommissioned and declared surplus by the Coast Guard may now be purchased by municipalities throughout the Nation, through the facilities of the War Shipping Administration.

As soon as headquarters is advised by a district Coast Guard officer that certain fireboats are surplus to the needs of the district, and this position is concurred in by headquarters, the Coast Guard will advise the Maritime Commission or War Shipping Administration that such boats are available for disposition as surplus property. If the boat is an acquired or converted vessel, it is handled by the War Shipping Administration. Coast Guard owned boats are handled by the Maritime Commission. The facilities of the War Shipping Administration will be used for the final sale of such boats.

In the case of vessels acquired from civilian sources, the original owner has the right to repossess the vessel before any steps are taken to call for public bids. If the owner elects to repossess his boat, no public bids are solicited. The price to the former owner will be determined with consideration given to the condition of the boat and the alterations necessary to restore it as nearly as possible to its original condition. Equipment left on board will be considered by the War Shipping Administration under a pricing formula adopted by it, in making settlement with the former owner, including fire fighting equipment

if so desired. In the case such a boat is not returned to the former owner, the War Shipping Administration then offers it for sale through competitive sealed bids. Fire pumps and necessary attachments left intact on all converted fireboats used by the Coast Guard will be removed or disposed of as required by the War Shipping Administration.

The exact number of converted vessels for such acquisition by municipalities to serve as fire protection for waterfront facilities cannot be accurately foretold. There are a number of Coast Guard built fireboats available as surplus property. It is suggested that municipal authorities interested in obtaining fireboats of either type contact the Director, Small Vessel Procurement and Disposal Division, War Shipping Administration, Washington 25, D. C.

NEW ROOSEVELT MEMORIAL SAVINGS BONDS ARE NOW AVAILABLE

There are now available for issuance under the military bond allotment program, bonds of the Franklin D. Roosevelt memorial series. This is a new series E bond, of $200 denomination placed on sale with the beginning of the current victory bond drive. Persons having military allotments of $150 or more per month, and those with quarterly deductions aggregating $150 may obtain bonds of this series by making proper application to the bond-issuing officer at headquarters. This does not authorize a change in the amount of the existing bond per quarter allotments or for the registering of new allotments under that plan.

CAPT. WILLIAM J. KOSSLER

Capt. William J. Kossler, U. S. C. G., pioneer in helicopter development and adaptation for Coast Guard use, died 16 November 1945, at the age of 49. Funeral services were held at Fort Myer Chapel, and interment was in Arlington National Cemetery.

Captain Kossler served 25 years in the Coast Guard, 10 of which were spent on aviation duty.

During World War I, Captain Kossler, as a third lieutenant of engineers, served on the cutters, *Morrill* and *Manning*. He resigned in 1919, but re-entered the Coast Guard 2 years later as an ensign. He served as engineering officer of the cutters, *Seneca*, *Kickapoo*, and *Beale*, and as an instructor in engineering at the Coast Guard Academy until 1929; from that time until 1932 he was captain of the Coast Guard rifle team, serving between seasons as executive officer on the cutters, *Hunt* and *Tampa;* and ordnance officer at Coast Guard headquarters. He was commended for his efforts in building up the rifle team to a point where it competed successfully against the best riflemen.

Captain Kossler had sought flight training throughout his service career, and in 1935, he was ordered to the Naval Training School at Pensacola, Fla., where he successfully completed the flying course and was designated a Coast Guard aviator. His first aviation duty was at the Coast Guard Air Station in St. Petersburg, Fla., after which, in October 1936, he was appointed commanding officer of the Coast Guard Air Station at Charleston, S. C. There, his duties involved administration of and participation in frequent patrol, search, and rescue flights. He was also inspector at aircraft companies during the construction of Coast Guard planes.

Early in 1940 he was a member of a board meeting in Washington to evaluate bids and consider designs for the manufacture of rotating wing aircraft. He followed closely the development of the helicopter; and in May 1944, was assigned to duty at the Coast Guard Air Station in Brooklyn, N. Y., as a special assistant to the engineer in chief, to assist in the development of the helicopter for Coast Guard use. He kept in touch with the research and development of the helicopter by various Government and commercial agencies throughout the country, so that the Coast Guard would at all times be cognizant of the newest adaptations for rotary wing planes. He completed a course in flying the Sikorsky helicopter and in July 1944 was designated a Coast Guard helicopter pilot.

Born in Pittsburgh, Pa., on 29 November, 1896, Captain Kosler attended the Carnegie Institute for 2 years until he was commissioned in the Coast Guard for service during World War I. Upon his release from the Coast Guard, he returned to Carnegie Institute to complete his education before reentering the service.

CHANGES IN ASSIGNMENT

Capt. Roger C. Heimer from AP 125 to United States Marine Hospital, San Francisco, Calif., for necessary treatment and appearing before Medical Survey.

Capt. Frederick G. Eastman from Coast Guard Training Station, Alameda,

to U. S. S. *General A. W. Greeley*, (AP 141) for duty as commanding officer.

Capt. Joseph D. Conway from DCGO, Twelfth Naval District to DCGO, First Naval District for duty as District Personel Officer.

Capt. Roscoe House from DCGO, Cleveland, to home to await action of retiring board.

Capt. Henry C. Perkins from detached orders to DCGO, Eleventh Naval District for duty as District Personnel Officer.

Capt. Paul R. Cronk from DCGO, Twelfth Naval District to APA 12 as commanding officer.

Commander John H. Hutson from Coast Guard Headquarters to DCGO, Ninth Cleveland Naval District for duty.

Commander Harry A. Loughlin from Demobilization Division, Coast Guard Headquarters to Chief Personnel Officer for duty.

Comander Russell R. Waesche, Jr., from Coast Guard Headquarters to DCGO, Fourth Naval District for duty as District Planning and Control Officer.

Commander John H. Wagline from PSC 13 to DCGO, Thirteenth Naval District for duty.

Commander Lance J. Kirstine from DCGO, Thirteenth Naval District to AK 174 as commanding officer.

Commander Randolph Ridgley, III, from AKA 18 to detached orders.

Commander William E. Creedon from detached orders to Coast Guard Receiving Station, New York, for temporary duty pending further assignment to engineer duty by headquarters.

Commander Kenneth S. Davis from DCGO, First Naval District to Coast Guard Depot, Woods Hole, Mass., for duty as Section Coast Guard Officer.

Commander George W. Playdon from Coast Guard Training Station, Alameda, to AP 124 for duty.

Commander David H. Bartlett from AP 124 to detached orders.

Commander Ralph D. Dean from DCGO, Fifth Naval District to DCGO, Third Naval District for duty as communications engineer officer.

Commander Arthur G. Morrill from Hospital to AKA 18 for duty.

Commander William B. Chiswell from detached orders to U. S. S. *General G. M. Randall* (AP 115) for duty.

Commander Christopher C. Knapp from Commander Escort Division 45 to St. Johns River Group, Reserve Fleet Atlantic for duty.

Commander William L. Maloney from AP 115 to DCGO, New York, for temporary duty pending further assignment by headquarters to MMHU duty.

Commander Joseph R. Scullion from DCGO, Fifth Naval District to PSC 5 for duty.

Commander Richard E. Morell from PSC 12 to Coast Guard Training Station, Alameda, for temporary duty pending further assignment.

Commander George W. Stedman, Jr. from AP 141 to DCGO, Fourth Naval District for duty in connection with MMI activities.

Commander Frank A. Erickson from Naval Air Station, Patuxent, Md., to Coast Guard Air Station, Brooklyn, for duty.

Commander Oscar D. Weed, Jr. from Air Sea Rescue to DCGO, Seventeenth Naval District for duty in connection with air-sea rescue work.

Commander M. F. Garfield from PF 15 to DCGO, New York, for duty.

Commander Spencer F. Hewins, transfer to U. S. S. *Leonard Wood* (APA 12) cancelled. Back to U. S. S. *Cambria* (APA 36) for duty.

Commander Arthur W. Johnson from Coast Guard Training Station, Alameda, to U. S. S. *Joseph T. Dickman* (APA 13) for duty as engineering officer.

Commander Carl H. Stober from detached orders to *Mackinaw* for duty.

Commander George A. Piper from detached orders to Coast Guard Receiving Station, N. Y., for temporary duty pending further assignment to engineer duty by headquarters.

Retired

Lt. Comdr. Harold L. Carter, 1 October 1945.

Lt. Comdr. Carroll A. Osborne, 1 October 1945.

Lt. Comdr. Lee R. Scott, 1 October 1945.

Releases From Active Duty

Capt. Lucien J. Ker (Ret.) USCG, returned to inactive duty.

Commander James H. Kimberly, USCGR.

Commander Palmer A. Niles, USCG, (Ret.), returned to inactive duty.

Promotions

Commander Frank J. Bennett, appointed commander, temporary service, rank from 15 March 1944.

Commander Carlin L. Brinkley, appointed commander, temporary service, rank from 15 March 1944.

Commander Kenneth W. Donnell (R), appointed commander, temporary service, rank from 15 March 1944.

Commander Willard L. Jones, appointed commander, temporary service, rank from 15 March 1944.

Commander George W. Playdon, appointed commander, temporary service, rank from 15 March 1944.

Commander William R. Tower (R), commander for temporary service.

Commander Elden G. Wigle, promotion to commander for temporary service, rank from 18 August 1945.

DIED

Capt. William J. Kossler, died 16 November 1945.

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